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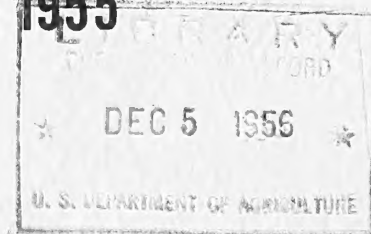
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Publications
of the
**LAKE STATES
FOREST EXPERIMENT
STATION**

1923 - 1955



assembled by
**L. P. OLSEN and
H. A. WOODWORTH**

STATION PAPER NO. 39, JULY 1956
LAKE STATES FOREST EXPERIMENT STATION
M. B. DICKERMAN, DIRECTOR
U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

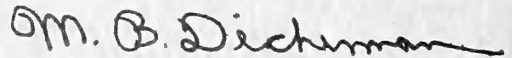
FOREWORD

One of the responsibilities of research organizations is to keep others informed as to the status of present work, plans for the future, and research findings. These responsibilities are accomplished in part by the Lake States Forest Experiment Station through correspondence, personal contact, group meetings, and field trips in experimental areas. Our chief means, though, of disseminating research findings is through publication.

This Station Paper lists the publications of the Lake States Forest Experiment Station since it was established in 1923. A study of the titles over the past 33 years and their dates of publication gives a fair indication of the advance in knowledge of forestry practices in the territory served by the Station: Michigan, Wisconsin, Minnesota, and North Dakota.

Although this list is limited to papers written by, or in collaboration with, Lake States personnel, many of the studies reported on were conducted in cooperation with others: forestry schools, state conservation departments, private industry, and federal agencies.

Originally the compilation of publications through 1951 was made by Helen A. Woodworth and published as Station Paper 15. The material in the following pages was assembled by Lucille P. Olsen, editor. She has broadened the classification scheme to include the newer areas of research and has added publications issued since 1951.



M. B. Dickerman
Director

TABLE OF CONTENTS

	<u>Page</u>
ABOUT THE LISTS.....	1
CLASSIFIED LIST.....	3
General forestry.....	3
Artificial regeneration.....	11
Stand improvement.....	21
Harvest cutting and natural regeneration.....	25
Management of timber types--comprehensive summaries.....	30
Forest genetics.....	31
Shelterbelts.....	35
Soils and water.....	38
Fire.....	45
Forest insects.....	48
Forest disease.....	52
Forest wildlife.....	52
Silvics, botany, ecology, and physiology.....	56
Estimation of timber volume.....	60
Estimation of timber growth and yield.....	62
Sampling and research methodology.....	65
Timber resource.....	67
Timber production statistics.....	75
Forest economics.....	77
Timber utilization and marketing.....	84
TECHNICAL NOTES.....	91
Artificial regeneration.....	91
Stand improvement.....	95
Harvest cutting and natural regeneration.....	97
Forest genetics.....	101
Shelterbelts.....	102
Soils and water.....	103
Fire.....	103
Forest insects.....	105
Forest diseases.....	105
Forest wildlife.....	105
Silvics, botany, ecology, and physiology.....	107
Estimation of timber volume.....	108
Estimation of timber growth and yield.....	111
Sampling and research methodology.....	112
Timber resource.....	112
Timber production statistics.....	113
Forest economics.....	116
Timber utilization and marketing.....	117

	<u>Page</u>
STATION PAPERS.....	120
MISCELLANEOUS REPORTS.....	123
ASPEN REPORTS.....	126
AUTHOR INDEX.....	128

*Publications
of the
Lake States Forest Experiment Station
1923-1955*

ABOUT THE LISTS

Copies of most of the publications listed in this bibliography can be found in forestry school libraries or in periodicals. An asterisk (*) preceding the title of a publication indicates that copies are still available for distribution. They can be obtained by writing to the Lake States Forest Experiment Station, St. Paul Campus, University of Minnesota, St. Paul 1, Minnesota.^{1/}

This publication list includes:

1. A classified list arranged by subject matter, by author within subject matter, and under each author by date. All publications are shown except brief Technical Notes, the material for which has usually been included in later, more comprehensive reports. Each item was placed in the category to which it seemed most closely related, and appears only once. A few cross-reference notes were appended at the end of some of the categories to guide the reader.
2. A list of Technical Notes arranged in the same manner as the above. These are 1- or 2-page processed reports, generally on a phase of a comprehensive project.
3. A list of Station Papers, which contain reports of research findings on studies of considerable scope.
4. A list of Miscellaneous Reports. These publications differ from Station Papers in that they are of more restricted interest or are based largely on compilation of results from other sources.

^{1/} The Station is maintained by the Forest Service, U. S. Department of Agriculture, in cooperation with the University of Minnesota.

5. A list of the Aspen Reports published during 1947-51. This series, a cooperative effort among a number of agencies, brought together what was then known about aspen.
6. An Author Index noting the pages on which reports by each author (Lake States personnel only) are to be found.

CLASSIFIED LIST

General Forestry

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NOTE: Additional material can be found in other categories, such as Timber Production Statistics (Horn--Consumption and utilization of tamarack by forest industries in the Lake States).

TECHNICAL NOTES

The Technical Note series was begun in 1928 and is still being continued. Each Note is a 1- or 2-page processed report on current research findings.

Artificial Regeneration

Order
No. 4/

- *TN 439 AREND, JOHN L. 1955. Development of closely spaced red pine, white pine, and Norway spruce after 40 years.
- *TN 19 BATES, CARLOS G. 1930. Why nurserymen prefer southern seeds.
- TN 1 LAKE STATES FOREST EXPERIMENT STATION. 1928. Behavior of white, Norway, and jack pine seeds.
- TN 2 _____ 1928. Abandoned fields are best sites for forest planting.
- *TN 12 _____ 1929. Germination tests of tree seeds.
- *TN 15 _____ 1929. Storage of Norway pine seed.
- *TN 23 _____ 1930. One year of storage benefits white pine seed.
- *TN 24 _____ 1930. Germination tests for coniferous seeds.
- *TN 29 _____ 1930. Pre-treatment of white pine seed for spring sowing.
- *TN 30 _____ 1931. Centers for collecting seed of Norway pine.
- *TN 45 _____ 1931. Helping nature to seed the forest.
- *TN 46 _____ 1931. Is light important immediately after germination?

4/ Only the order number is needed for Technical Note requests.

Order No.

- TN 55 LAKE STATES FOREST EXPERIMENT STATION. 1932.
Neglected plantations seldom successful.
- *TN 56 _____ 1932. Dryness--key to storage of pine seed.
- TN 60 _____ 1933. Direct seeding can sometimes be used in
reforestation.
- *TN 63 _____ 1933. Well developed stock necessary for
successful planting.
- *TN 65 _____ 1933. Grading seedlings.
- *TN 80 _____ 1934. Planting under aspen can be made successful.
- *TN 87 _____ 1935. How effective is the commercial method of
treating green ash?
- *TN 88 _____ 1935. Why seeds are dormant.
- *TN 89 _____ 1935. How can seed dormancy be determined?
- *TN 90 _____ 1935. Some new chemical aids in hastening seed
germination.
- *TN 96 _____ 1935. Prolonged exposure of roots causes death
of planting stock.
- *TN 97 _____ 1935. What trees withstand drought best?
- *TN 98 _____ 1935. What rainfall factor causes drought damage?
- *TN 99 _____ 1935. Seedlings or transplants.
- *TN 100 _____ 1935. Effect of shade in reducing soil surface
temperatures.
- *TN 103 _____ 1936. Planting stock must contend with high
surface temperatures.
- *TN 104 _____ 1936. Does stock balance affect survival?
- TN 106 _____ 1936. Abrasives used in scarifying forest tree
seeds.
- TN 115 _____ 1936. Nursery shade requirements of ponderosa pine.

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- *TN 117 LAKE STATES FOREST EXPERIMENT STATION. 1936.
Winter injury to plantations.
- *TN 125 _____ 1937. Heat more injurious than lack of
moisture during drought.
- *TN 126 _____ 1937. Watering reduces soil-surface
temperatures.
- *TN 131 _____ 1937. Is spring or fall the better planting
season?
- *TN 132 _____ 1937. Does freezing injure planting stock?
- *TN 137 _____ 1938. Peat or sand for covering on spruce
seedbeds?
- *TN 139 _____ 1938. Water tables and survival.
- *TN 140 _____ 1938. Deep rooting and plantation survival.
- *TN 143 _____ 1939. Thinning of conifer seedlings in the
nursery produces bigger but fewer plantable
trees.
- *TN 144 _____ 1939. Beneficial effect of partial shade on
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- *TN 145 _____ 1939. Top-pruning of conifer stock a doubtful
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- *TN 162 _____ 1940. Effect of liquid fertilizers on nursery
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- TN 169 _____ 1940. Fertilized nursery stock shows increased
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- *TN 170 _____ 1940. When to pick pine cones.
- *TN 173 _____ 1941. Storage of red pine seed.
- *TN 174 _____ 1941. Blowouts in the sandhills reclaimed by
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- *TN 177 _____ 1941. Effect of temperature on germination.
- *TN 190 _____ 1942. Root pruning--a labor saver.
- *TN 218 _____ 1944. Disking saves the topsoil in forest
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- *TN 256 ROE, EUGENE I. 1946. Restocking black spruce swamps
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- *TN 353 _____ 1951. Early release from aspen improves yield
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- *TN 258 _____ 1946. The area reforested in the Lake States.
- *TN 265 _____ 1946. Tree species planted in the Lake States.
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- *TN 319 _____ 1949. Correction of soil acidity in conifer
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- *TN 342 AREND, JOHN L., and MONROE, A. F. 1950. Growth in two oak woodlots following an improvement cut.
- *TN 367 _____ and STEPHENSON, JOSEPH R. 1952. Some costs and effects of chemical release of pine in northern Michigan.
- *TN 385 _____ and COULTER, L. L. 1952. Frill girdle tests with 2,4,5-T in Lower Michigan.
- *TN 401 _____ 1953. Scrub aspen control with basal sprays.
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- *TN 374 HEINSELMAN, MIRON L. 1952. Labor costs for thinning young aspen.
- *TN 411 _____ 1954. Thinning from above reduces total yields in medium site aspen.
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- TN 52 _____ 1932. Growing bigger and better aspen.
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- *TN 392 CONOVER, DAVID F. 1953. Effects of competition on red pine and white pine reproduction.
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- *TN 305 _____ 1948. Winter damage to Scotch pine in northern Minnesota.
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- *TN 427 STOECKELER, J. H., and STROTHMANN, R. O. 1955. Early development of native and hybrid aspens.
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- *TN 10 LAKE STATES FOREST EXPERIMENT STATION. 1929. Growth in swamps before and after drainage.
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- *TN 328 _____ 1950. Is fire prevention effective?
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Technical Notes

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- *TN 34 _____ 1931. Fire hinders conversion of aspen to pine and spruce.
- *TN 44 _____ 1931. Spring fires on the jack pine plains.
- TN 47 _____ 1931. Test of portable hand power fire pumps.
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- *TN 57 _____ 1933. How soon after a fire can damage be determined?
- *TN 58 _____ 1933. Fire damage as affected by season of burning.
- *TN 59 _____ 1933. Slash disposal--jack pine.
- TN 75 _____ 1934. Estimating fire damage in the Lake States.
- *TN 77 _____ 1934. Damage to advance growth by slash disposal.
- TN 78 _____ 1934. Relative hazard and estimated cost of protection by forest types--Lake States.
- *TN 83 _____ 1934. Use of calcium chloride in forest fire control.
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- TN 199 _____ 1943. More effective measurement of forest fire danger.
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- *TN 416 _____ 1954. Mortality from fire in jack pine stands.
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- *TN 18 _____ 1929. Ordinary white daylight is best
for growth of trees.
- *TN 25 _____ 1930. Ground vegetation--an indicator
of forest growth.
- *TN 26 _____ 1930. More light in the forest?
- *TN 32 _____ 1931. Drought resistance of forest
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- *TN 35 _____ 1931. Sunlight and forest growth.
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- *TN 390 CHASE, CLARENCE D., and GEVORKIANTZ, S. R. 1953. Volume in tops and limbs of sawlog trees.
- TN 241 GEVORKIANTZ, S. R. 1945. A composite cordwood volume table for pulpwood species in the Lake States.
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- *TN 362 _____ and OLSEN, L. P. 1951. Bark percent in
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- *TN 375 _____ 1952. A mill-scale log rule.
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- *TN 37 _____ 1931. Volume of second-growth Norway pine:
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- *TN 39 _____ 1931. Volume of second-growth Norway pine:
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Technical Notes

Order No.

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- TN 68 _____ 1933. Volume of sugar maple (board feet--Scribner).
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Michigan.
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shrinkage.
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Order No.

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Taper Table I. Basswood.
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for the Lake States.
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to a cord?
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and Wisconsin.
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production.
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farm woodland.
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Lake States.
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by smaller sawmills.
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continues at high level.
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Lake States.
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excelsior wood--1946.
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in 1947.
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production.
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wood.
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States--1948.
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level in Lake States--1949.

Technical Notes

Order No.

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Order No.

- | | |
|---------|--|
| *TN 180 | LAKE STATES FOREST EXPERIMENT STATION. 1941.
Production of lumber, lath, and shingles in
Michigan--1940. |
| TN 191 | 1942. Michigan lumber production largest
since 1929. |
| *TN 192 | 1942. Minnesota lumber cut largest in eleven
years. |
| TN 193 | 1942. War demands strain Wisconsin sawtimber
resources. |
| TN 195 | 1943. Hemlock tanbark production should be
increased. |
| TN 200 | 1943. How the forest experiment station helps
in the war effort. |
| *TN 201 | 1943. Farmer custom sawing is increasing. |
| TN 204 | 1943. Estimated lumber production 1942:
Lake States. |
| TN 205 | 1943. Estimated lumber production 1942:
Michigan. |
| *TN 206 | 1943. Estimated lumber production 1942:
Minnesota. |
| *TN 207 | 1943. Estimated lumber production 1942:
Wisconsin. |
| *TN 208 | 1943. Lake States lumber production off
34 percent in 1943. |
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Minnesota. |
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in 1943. |
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in 1943. |
| TN 212 | 1943. Michigan not cutting enough fuelwood. |

Order No.

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Fuelwood scarce in Wisconsin.
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lumber production--a hopeful trend.
- *TN 289 NEETZEL, J. R. 1948. Small sawmills cut much lumber
in southern Minnesota.
- *TN 317 _____ 1949. Distribution of lumber cut from southern
Minnesota.
- TN 271 OLSEN, LUCILLE P. 1947. 1946 Michigan lumber production
continues at high level.
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in 1946.
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production in 1946.
- *TN 232 SCHOLZ, HAROLD F. 1945. Tie production important in
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from selective logging.
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Order No.

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- *TN 220 _____ 1944. Additional volume of spruce pulpwood gained by utilizing to a 1-1/2-inch top.
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Order No.

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AUTHOR INDEX

<u>Name</u>	<u>Page Nos.</u>
Aamodt, E. E. - - - -	11, 18, 61
Aikman, J. M. - - - -	35
Aldous, Clarence M. - -	52, 53
Aldous, Shaler E. - - -	53, 54, 55, 56, 105
Amidon, George B. - - -	84
Anderson, R. L. - - - -	52, 105
Anderson, Robert T. - -	65
Arbogast, Carl F. - - -	3, 21, 24, 25, 27, 28, 30, 84, 95, 105
Arend, John L. - - - -	21, 38, 40, 66, 84, 85, 88, 91, 95, 97, 103, 111
Averell, James L. - - -	3, 21, 25, 31, 38, 44, 52, 56, 60
Baskin, L. C. - - - - -	18
Bates, C. G. - - - - -	11, 31, 35, 37, 39, 40, 56, 57, 91, 102
Batzer, H. O. - - - - -	48, 49
Bean, James L. - - - - -	48, 50
Beckwith, L. C. - - - -	48, 49
Benjamin, Daniel M. - -	48, 105
Blythe, R. H., Jr. - - -	13, 25, 60, 66
Briggs, A. H. - - - - -	12, 54
Brown, R. M. - - - - -	21, 60
Chase, Clarence D. - - -	3, 61, 67, 68, 108
Conover, David F. - - -	97
Creighton, J. W. - - - -	85, 117
Crosby, John S. - - - -	45, 103
Cunningham, R. N. - - -	3, 8, 47, 68, 69, 70, 71, 75, 77, 78, 83, 84, 85, 112, 113
Demmon, E. L. - - - - -	4, 69, 78, 85, 117
Dickerman, M. B. - - - -	4, 21, 31, 70, 75, 78, 79, 80, 85
Diemer, Jack A. - - - -	71
Dortignac, E. J. - - - -	37
Drooz, Arnold T. - - - -	49, 50, 51, 105
Duerr, William A. - - - -	25, 61, 62, 63, 84
Elkins, W. A. - - - - -	54
Engle, LaMont G. - - - -	21, 22, 23, 96, 97, 117
Ewan, H. G. - - - - - -	49
Eyre, F. H. - - - - - -	12, 22, 24, 25, 26, 29, 30, 57, 79, 96
Farrington, Robert A. - -	26, 41
Findell, Virgil - - - - -	112

<u>Name</u>	<u>Page Nos.</u>
Fisher, P. L. - - - - -	12, 54
Frank, Bernard - - - - -	5, 77, 79, 83
Gensch, R. H. - - - - -	56
Gevorkiantz, S. R. - - - - -	5, 12, 14, 26, 32, 36, 57, 60, 61, 62, 63, 64, 66, 67, 79, 85, 101, 108, 109, 117
Graham, S. A. - - - - -	50
Godman, R. M. - - - - -	117
Guilkey, Paul C. - - - - -	64, 70, 72, 73, 109, 111
Gunderson, Wallace R. H. - - - - -	111, 117
Gysel, Leslie W. - - - - -	40, 103
Heinselman, M. L. - - - - -	24, 57, 80, 96, 98, 105, 106
Hesterberg, Gene - - - - -	118
Holcomb, Carl J. - - - - -	70, 85, 86
Holmberg, L. A. - - - - -	86
Horn, Arthur G. - - - - -	67, 68, 70, 72, 73, 75, 76, 86, 113, 114
Huey, Ben M. - - - - -	77
Johnson, Richard C. - - - - -	76, 86, 118
Kittredge, Joseph - - - - -	5, 12, 22, 26, 30, 32, 38, 40, 57, 64, 66, 86
Kluender, W. A. - - - - -	18, 86, 89, 114
Krefting, Laurits W. - - - - -	54, 55, 56, 106
LeBarron, Russell K. - - - - -	13, 26, 30, 40, 45, 55, 57, 64, 84, 87, 99
Limstrom, G. A. - - - - -	19
Longwood, F. R. - - - - -	25, 27, 30, 79, 87, 96, 99, 116, 118
MacAloney, H. J. - - - - -	32, 48, 49, 51
Macon, John W. - - - - -	62, 71, 77
Mayne, Howard W. - - - - -	79, 116
McCulley, Robert D. - - - - -	32
Meuli, Lloyd J. - - - - -	17, 18, 32
Mitchell, J. A. - - - - -	7, 13, 40, 41, 45, 46, 47, 79, 80, 104, 105
Moore, Francis I. - - - - -	77
Morgan, J. T. - - - - -	118
Moser, H. C. - - - - -	68, 69, 71, 80, 83
Mowat, E. L. - - - - -	7, 22, 27, 29
Neetzel, John R. - - - - -	7, 25, 30, 40, 77, 85, 86, 87, 103, 113, 116, 117, 118
Neff, L. P. - - - - -	7, 27, 99, 100
Nienstaedt, Hans - - - - -	32
Office of Iron Range Re- sources & Rehabilitation	71, 72
Olson, George T. - - - - -	66
Olsen, Lucille P. - - - - -	62, 64, 109, 116
Quinney, D. N. - - - - -	118

<u>Name</u>	<u>Page Nos.</u>
Ralston, R. A. - - - - -	13, 23, 27, 58, 64, 80, 85, 88, 94, 95, 97 100, 108
Richman, H. W. - - - - -	46
Roe, Eugene I. - - - - -	7, 12, 13, 14, 19, 23, 27, 30, 41, 54, 55, 57, 58, 80, 94, 97, 100, 108, 118
Rudolf, Paul O. - - - - -	5, 11, 12, 14, 15, 16, 17, 19, 23, 26, 27, 30, 32, 33, 36, 41, 51, 52, 55, 57, 58, 94, 100, 102, 106, 108
Salminen, W. A. - - - - -	23, 117, 119
Samson, N. T. - - - - -	67
Sands, Waldo M. - - - - -	88, 119
Sauer, K. W. - - - - -	7
Scholz, Harold F. - - - - -	24, 28, 31, 36, 41, 42, 43, 47, 60, 62, 63, 64, 65, 86, 88, 94, 97, 100, 108, 116, 119
Shirley, Hardy L. - - - - -	11, 12, 17, 18, 24, 27, 32, 34, 58, 59, 65
Skilling, D. D. - - - - -	52
Stoddard, Charles H. - - - - -	25
Stoeckeler, J. H. - - - - -	3, 7, 8, 12, 18, 19, 20, 23, 24, 27, 28, 34, 35, 36, 37, 41, 42, 51, 55, 59, 62, 65, 67, 88, 94, 95, 97, 100, 102, 105, 106, 112
Stoltz, E. R. - - - - -	62
Strothmann, R. O. - - - - -	102
Thames, John L. - - - - -	42
Tobiaski, Robert - - - - -	42
Vogel, Frederick H. - - - - -	88
Wackerman, A. E. - - - - -	8, 28, 40, 60, 65, 73, 80
Wall, M. L. - - - - -	38
Ware, E. R. - - - - -	20, 73
White, Charles H. - - - - -	86, 89
White, H. G. - - - - -	8, 69, 80, 89
Wijkstrom, Stig - - - - -	67
Wisconsin Conservation Department - - - - -	73, 74
Zasada, Z. A. - - - - -	24, 28, 31, 57, 80, 81, 85, 87, 89, 113, 117, 119
Zehngraff, Paul J. - - - - -	8, 20, 22, 24, 28, 30, 31, 51, 57, 65, 66, 81, 85, 96, 97, 101, 108, 111, 112, 117, 119
Zillgitt, W. M. - - - - -	25, 28, 29, 30, 62, 81, 101, 111, 117, 119
Zon, Raphael - - - - -	3, 5, 8, 9, 10, 11, 29, 31, 34, 37, 38, 43, 44, 47, 58, 60, 63, 65, 74, 77, 81, 82, 83, 84, 90



